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INDUSTRIAL LAND USE AND EMPLOYMENT IN EDMONTON

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by

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IMPORTANT NOTE

This Technical Paper has been prepared by the Corporate Forecasting Group, Long Range Planning Branch, Planning and Building Department. The Paper documents research results as part of an ongoing forecasting activity. Neither the methods nor results have been endorsed by the City of Edmonton.

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INDUSTRIAL LAND USE AND EMPLOYMENT IN EDMONTON

1. INTRODUCTION

The most recent economic forecast for Edmonton indicates that only low growth can be expected to 1988 (City of Edmonton, 1986). In this environment, two questions on industrial land use policies need to be addressed. How are current industrial land use policies influencing local economic growth? How appropriate are the City's industrial land use policies, given present and forecasted economic circumstances?

This paper suggests that the current industrial land use policies may deter employment growth in Edmonton. There are three significant features of the relationship between land use policies and employment which lead to this conclusion:

(i) industrial areas in Edmonton are really trade and service employment areas;

(ii) the vast inventory of serviced industrial land, relative to the industrial demand, means there is no need to protect industrial land supply;

(iii) future employment growth will be concentrated in trade and service employment and not in industrial employment.

Each of these features is examined to highlight the connection between industrial policies and employment growth.

In Section 2, the current City land use policies and bylaw provisions for the industrial areas are examined to provide a basis for the discussion in the following section. This discussion highlights the approach and relative priority given to the various land uses in the industrial areas. Section 3 presents information on the current distribution by type of employment in the industrial areas. In Section 4 the supply situation for industrial land is reviewed, while in Section 5 the likely pattern and implications of future employment growth in the industrial areas are discussed. Several conclusions on a different approach to industrial land use planning are provided in Section 6.

2. BACKGROUND ON INDUSTRIAL AREA POLICIES AND DEVELOPMENT CONTROL MEASURES

The existing City policies and land use regulations for industrial areas establish permitted uses and development guidelines for both industrial and non-industrial uses. This section examines the General Municipal Plan, the industrial district sections of Land Use Bylaw 5996 and the draft District Plans in terms of their approach for policy and regulation of land use in industrial areas.

2.1 General Municipal Plan (GMP) Policies

The current GMP objectives and policies identify clearly industrial activities as the preferred uses in industrial areas, with commercial uses and offices intended to be limited in scope. In its introduction to the industrial policies, the GMP states that "the essential industrial nature of these areas must not be jeopardized, but provision must nevertheless be made for local services and offices linked to industrial functions and the overall objective of the office decentralization strategy". (GMP, p. 7.1).

The GMP reflects this statement on the dominance of industrial uses through the objective of exercising "strict control over the development of non-industrial uses in industrial areas so as to ensure a supply of land for medium and heavy industrial uses." (GMP, Objective 7.C).

The policies following this objective are all consistent in attempting to control non-industrial uses:

(i) Policy 7.C.1 permits general office development at a limited number of employment nodes;

(ii) Policy 7.C.2 permits only existing commercial development areas in industrial areas to be districted for general business uses;

(iii) Policy 7.C.3 allows limited retail and office uses in business parks, provided among other things, the retail uses and personal service uses are oriented to corporate clients or the personal needs of the industrial employees;

(iv) Policy 7.C.4 provides for industrial service centres where there would be low intensity retail and service commercial facilities servicing industrial firms and employees;

(v) Policy 7.C.5 allows office, showroom and sales areas in industrial buildings up to 20% of the gross floor area of the building.

In addition to attempting to narrow the scope for non-industrial activities, the GMP tries to link the non-industrial activities to those servicing the industrial uses. There is only a limited recognition that new retail and service activities, with no connection to industrial uses, may need or be appropriate in the "industrial" areas. The desirability of this approach to controlling non-industrial uses in the GMP is assessed in Section 3 when the current employment pattern in the industrial areas is examined.

2.2 Land Use Bylaw 5996

The provisions in the Land Use Bylaw 5996 deal with the GMP objectives and policies for industrial areas as follows:

IB - Industrial Business District

- The IB district permits uses which have no nuisances generated outside a building.
- The range of permitted uses is large, ranging from general industrial to professional, financial and office support services (these terms are defined in Section 1-10 of the Bylaw).
- A broad range of commercial and service activities are also allowed as discretionary uses; special regulations are provided for these uses for their location and grouping.

- The range of permitted retail and service uses has been increased since 1981 in response to continuing development applications.

IM - Medium Industrial District

- The IM district allows for activities which have outdoor operations or storage.
- Commercial and services uses are limited to activities such as equipment repair and warehouse sales.

IH - Heavy Industrial District

- The IH district allows for uses which could have significant off site impacts on other districts.
- No retail or services uses are allowed.

The Land Use Bylaw in the IB district allows a broader range of retail and service uses than the GMP policies likely anticipated. As well, by including professional, financial and office support services in office buildings, the IB district also can accommodate numerous types of service uses and employees. Further, the IB district, through its range of uses, reduces the emphasis on non-industrial uses which have a direct connection to servicing industrial uses and employees. In effect, the GMP anticipates that the industrial uses will be the preeminent uses; the Land Use Bylaw in the IB district provisions makes general industrial only one of many uses, with extensive retail and service uses also permitted. As well, the range of uses in the IB has been expanded significantly since 1981 through bylaw amendments to accommodate numerous development proposals. There have also been redistrictings from IM to IB to accommodate the demand for commercial and service proposals.

2.3 Draft District Plans

The draft District Plans have also recognized that retail and service uses in the industrial areas have become important land uses. As well, the Plans note that the IB district broadly allows commercial and service uses. As an example, the draft

West District Plan proposes that the Northwest Industrial Outline Plan should be revised for the Sheffield Cluster to "reflect the demand for commercial and light industrial development in the area".

In the Mistatim area, the draft Plan proposes that the IB areas, except along St. Albert Trail, be redesignated to IM because (i) "the City's light industrial classification opens the area up for commercial uses which drive industry out" and, (ii) there should be more medium and heavy industrial sites in the West District.

.4 Summary

This discussion highlights the several important land use policy and regulatory features of the issue of non-industrial uses in the industrial areas:

1. The GMP attempts to limit non-industrial uses or require them to service industry. Industrial activity is anticipated to be preeminent, while retail and service uses are expected to be much more limited in scope.

2. However, the Land Use Bylaw 5996 in the IB district allows a much broader range of retail and service uses in industrial areas than the GMP anticipated. Many of the uses do not serve industry, but have their own market.

3. The range of non-industrial uses in the IB district has been expanded since 1981 to accommodate development proposals and there have been numerous redistrictings from IM to IB for the same reason. Consequently, the GMP policies are not being implemented by the land use bylaw as intended, but the bylaw is more responsive to market demands.

4. The draft District Plans recognize these issues, but still wish to designate land for medium and heavy industrial uses under the assumption there is a demand for such sites.

The next sections examine these features in relation to the current and expected future employment pattern in industrial areas.

3. INDUSTRIAL AREAS IN EDMONTON ARE REALLY TRADE AND SERVICE EMPLOYMENT AREAS

3.1 Employment Pattern in Industrial Areas

In Edmonton, the industrial outline plan areas are not centres of industrial employment. Rather, trade and service activities are the most dominant functions in terms of employment. What the GMP has specifically identified in Objective 7.C and its subsequent policies as "non-industrial uses" (offices, retail, business uses), have in fact become the major employment activities in industrial areas. (See Note 1.) The GMP description of the "essential industrial nature" of these areas is inconsistent with the dominance of the trade and service activities.

Within the Northwest, Southeast and South industrial outline plan areas, industrial (or manufacturing) employment in 1984 accounted for 12.6% of the total employment. (See Table 1). The most significant employment generators in these industrial areas were trade (wholesale and retail) with 25.5% of the total, and services (community, business and personal) with 23.4%. In short, manufacturing employment in the "industrial" areas of Edmonton is only a very modest component of the total employment in these areas. Indeed, trade and services employment constitutes almost an absolute majority, with 49% of the total employment.

Clearly, some of the trade and service employment serves the needs of industrial operations. Examples include restaurants, equipment rentals and consultants. There is no available data to determine precisely the extent of these relationships. However, given the scale of trade and service employment in the industrial areas, much of the trade/service employment must service its own markets as well as the larger city and regional population.

3.2 Needs of Trade and Services Uses

By focusing on the needs of industrial uses, GMP policies do not give sufficient attention to the policy and locational needs of trade and service activities. Three specific needs for trade/service are apparent:

TABLE 1

Employment Distribution
1984

Area	Manufacturing		Trade		Services		Total
	#	%	#	%	#	%	
Northwest	2,597	11.4	6,903	30.2	6,351	28.8	22,849
South	1,096	19.7	843	15.2	1,097	19.8	5,550
Southeast	808	11.0	1,372	18.7	907	12.4	7,320
TOTAL	4,501	12.6	9,118	25.5	8,355	23.4	35,727

Source: City of Edmonton Transportation Department, City of Edmonton Employment Study Final Report, April 1985, Table 2.10

(i) The objective of the GMP to "exercise strict control over the development of non-industrial uses in industrial areas" (GMP Objective 7.C) establishes that trade and service uses are intended to be secondary in importance to industrial, and, in fact are supposed to be limited to those which service the industrial employees. This approach implies that:

- trade and service activities in industrial areas are viewed as a form of residual land use, rather than significant land uses in their own right, requiring their own policies for accommodating development in "industrial" areas; and,

- policies in the GMP focus on maintaining industrial land supply, (see 7.D.2), but do not consider as an equally important priority the maintenance of an adequate supply of sites for the trade and service activities.

(ii) A second consequence of the significance of the trade/service function in industrial areas is these activities will outbid the "industrial" land uses for many sites (Edmonton Planning Department, "Calgary Trail Land Use Study/Economic Evaluation", 1983). Obvious candidate sites include the frontages along the arterials on the boundaries of the industrial outline plan areas, the intersection of major arterials and arterial/freeway interchanges. True "general industrial uses", as defined in the Land Use Bylaw, will ultimately be found only along the interior collector roads in "industrial" areas or on remanent parcels.

(iii) A third consequence is that while trade/service uses will focus on locations with high visibility and good vehicular access, they are not effectively restricted to these locations by current land use policy and enforcement. With the IM and IB land use districts applying to the majority of industrial land and trade/service uses being permitted in both districts, such uses will proliferate throughout industrial ASP's. Finally, negative impacts generated by trade/service users, such as parking and traffic problems and other types of incompatibility with "true industrial" uses, are accentuated.

The combination of trade/service uses outbidding industry at high visibility sites, as well as proliferating in the industrial areas through permissive land use districts, means that the current "onionskin" concept for industrial design in the ASPs is no longer valid. (The "onionskin" involves heavy industrial uses at the centre of the plan, buffered by medium industrial, with high quality business uses along the bordering arterial roads). This loss of planning principles affects the quality of industrial ASP's as well as the quality of development. It also makes it extremely difficult to counter applications for later trade/service land use redistrictings because, individual decisions become arbitrary.

In summary, once the "industrial" areas in Edmonton are recognized as major trade and service employment areas with a preponderance of "non-industrial" employment, a different land use policy approach is required to meet demands for space by trade and service uses. The next section examines the problem from the land supply perspective which also supports the need for a different land use policy in the industrial areas.

4. VAST INVENTORY OF SERVICED INDUSTRIAL LANDS RELATIVE TO INDUSTRIAL ABSORPTION MEANS INDUSTRIAL LAND DOES NOT NEED TO BE PROTECTED

The second significant feature of industrial land use considerations is the exceptionally large inventory of vacant, serviced industrial land, particularly in view of the low past and projected rates of absorption. The large inventory issue is important because the GMP states that the objective for "strict control over the development of non-industrial uses in industrial areas (is) to ensure a supply of land for medium and heavy industrial uses". If there is a large available serviced inventory, then the rationale for the "strict control" over "non-industrial uses in industrial areas" is removed.

At the end of 1985, the total amount of fully serviced, vacant industrial land was 970 hectares. Using a forecasted absorption rate of 30 hectares per year, the current inventory would last over 32 years. Using an absorption rate of 70 hectares per year (the average annual rate over 1975 to 1985), the inventory of serviced industrial land would still last almost 14 years.

When examined by land use district, using the past three years as the measure of absorption to smooth the fluctuations, the inventory shows that both the IM and IB have approximately a 20 year inventory, while the inventory figures in the hundreds of years for IH and AGI categories are implausible (resulting from the virtual lack of absorption over 1983 to 1985 for these two categories). (See Table 2).

The excessive supply of serviced industrial land will encourage owners of serviced land to attempt to develop their land where there is the greatest market demand. In the future, this demand for land will not be for "industrial" employment, but rather for more trade and service uses as shown in the next section.

TABLE 2

Inventory of Serviced Industrial Land

Land Use Bylaw District	Serviced Land Supply (1985)	Average Annual Absorption Rate (1983-85)	Inventory
IH - Heavy Industrial	96 ha.	0.2 ha.	480 years
IM - Medium Industrial	326 ha.	13.6 ha.	24 years
IB - Business Industrial	312 ha.	15.8 ha.	20 years
AGI - Industrial Reserve	90 ha.	0.8 ha.	113 years

Source: City of Edmonton, Planning and Building Department, Status of Industrial Land Report, December 1985, Tables 4.1 and 5.2.

5. FUTURE INDUSTRIAL EMPLOYMENT GROWTH WILL BE SMALL RELATIVE TO TRADE AND SERVICE EMPLOYMENT GROWTH

Employment forecasts for Edmonton for 1984 to 1991 indicate that there will be very little growth in industrial employment. Under the most optimistic conditions, manufacturing employment growth might only account for up to 10% of the total employment growth in Edmonton over 1984 to 1991. (See Table 3). Over the next few years the major employment growth sector in Edmonton is expected to be in services, with trade a distant second. (See Table 3).

As a result, most of the future demand for facilities and land in the "industrial" areas will likely be to accommodate service employment, plus a smaller amount in trade employment. Industrial employment growth in the future will likely be too small to account for a significant demand for "industrial" land.

The central policy issue for the "industrial" areas is whether to accommodate the continued demand for sites by non-industrial uses, which will generate the bulk of new employment in Edmonton, on a part of the existing, excessive industrial land supply. A failure to accommodate the likely demand for sites for trade and services facilities may serve to frustrate both economic and employment growth in Edmonton.

TABLE 3

Forecasted
Edmonton Employment Growth
1984 - 1991

Sector	Forecasted Employment Increase	Share of Total Employment Increase
Services	16,000	42%
Trade	4,400 to 5,900	11.6% to 15.5%
Manufacturing	1,600 to 3,700	4.2% to 9.7%

Source: City of Edmonton, Planning and Building Department, David J.A. Douglas and Associated Ltd., Edmonton Economic Base Analysis Final Report, July 1985, p. 23.

6. CONCLUSIONS - CHANGE THE APPROACH TO INDUSTRIAL AREA LAND USE POLICIES

Several conclusions are evident from this discussion.

1. Continuing to identify suburban "industrial" areas in Edmonton as "industrial" ignores the dominance of the "non-industrial" service and trade employment.

2. Future employment growth in Edmonton to 1991 will likely be concentrated in the services sector, with trade following. This will lead to continuing pressure to redistrict vacant, serviced IB and IM land to allow service and trade facilities. True "general industrial use" land demands will be very small as a result of the forecast of limited industrial employment growth and can be easily accommodated in the large inventory of serviced land.

3. The current GMP policy approach to protect "industrial" lands as the dominant and preferred use in "industrial" areas is at odds with:

   - the existing oversupply of serviced industrial land; and
   - the likely pattern of future service and trade employment growth.

   The current provisions of the IB district more closely correspond to the demands for trade and service uses in the industrial areas. The divergence between the land use bylaw and GMP is likely to widen in view of the employment forecasts.

4. A more balanced approach in the GMP which recognizes the locational requirements for trade and services as appropriate uses in "industrial" areas is necessary and would fill the current policy void for applying the IB district. The components of this approach should include:

   (i) explicit recognition of the importance of services and trade in "industrial" areas;

(ii) removal of the present bias protecting industrial land availability;

(iii) incorporation of policies to ensure adequate supplies of land for service and trade uses;

(iv) locational criteria for service and trade which recognize their demand for sites with high visibility and good vehicle access;

(v) new design principles for industrial ASP's to replace the "onionskin" approach.

(vi) protection of sufficient lands for existing and future industrial operations.

5. In short, the current industrial land use policy in the GMP may become an obstacle to employment growth. This is a serious deficiency in a time of economic uncertainty and high unemployment in Edmonton. The present GMP industrial land use policies could therefore undermine the extensive City economic development initiatives now being taken.

NOTE

1. This discussion has used employment as the indicator for the description of the functions of an area. Floorspace devoted to industrial activity, compared to trade and service floorspace, could also be used. The Long Range Planning Branch is undertaking a business floorspace inventory in 1986 which will provide the floorspace distribution by type of use. However, a reasonable anticipation would be that industrial floorspace would account for a significantly higher percentage of total floorspace than does industrial employment of total employment. The reason for this belief is the higher floorspace per worker figure for industrial activities (i.e., manufacturing has a lower employment density per unit of land or floorspace than retail or trade). Nevertheless, employment is considered a better indicator than floorspace of the actual function and activities in an area.

BIBLIOGRAPHY

1. City of Edmonton, Planning Department, General Municipal Plan, Volume I, 1980.

2. City of Edmonton, Planning Department, Calgary Trail Land Use Study/Economic Evaluation, 1983.

3. City of Edmonton, Planning and Building Department, Status of Industrial Land Report, 1985.

4. City of Edmonton, Planning and Building Department, David J.A. Douglas and Associated Limited, Edmonton Economic Base Analysis Final Report. 1985

5. City of Edmonton Forecast Committee, Socio-Economic Forecasts, 1986 - 1991, City of Edmonton, 1986.